

What is claimed is:

1. An image forming apparatus, comprising:

transportation means which transports a sheet-like recording medium along a predetermined transportation path;

first detection means which outputs a predetermined first detection signal when said recording medium is located at a first detection position which is behind said transportation means in the transportation direction of transporting said recording medium; and

jam judging means which measures the duration of said first detection signal, and based on a result of a comparison of the measurement result with a reference time which is set in accordance with the length of said recording medium along said transportation path, judges whether a jam of said recording medium has occurred.

2. The image forming apparatus of claim 1, wherein said reference time corresponds to a period of time which said recording medium transported by said transportation means needs to move passed said first detection position normally.

3. The image forming apparatus of claim 2, wherein when said duration is shorter than said reference time, said jam judging means judges that said jam has occurred.

4. The image forming apparatus of claim 1, wherein an image is capable of being formed on multiple types of said recording mediums whose sizes are different from each other, and

said reference time is set in accordance with the size of said recording medium on said image is to be formed.

5. The image forming apparatus of claim 1, further comprising length detection means which is disposed ahead of said transportation means on said transportation path and which detects the length of said recording medium along said transportation path,

wherein said reference time is set based on a detection result obtained by said length detection means.

6. The image forming apparatus of claim 1, wherein said transportation means is a fixing unit which fixes an unfixed image on said recording medium.

7. A jam detecting method for use in an image forming apparatus comprising transportation means which is for transporting a sheet-like recording medium along a predetermined transportation path, said method comprising the steps of:

setting a reference time in accordance with the length of said recording medium along said transportation path;

measuring the duration of a first detection signal which first

detection means, which is disposed at a first detection position which is behind said transportation means in the transportation direction of transporting said recording medium, outputs when said recording medium is located at said first detection position; and

comparing thus measured duration with said reference time and judging whether a jam of said recording medium has occurred based on the comparison result.

8. An image forming apparatus, comprising:

transportation means which transports a sheet-like recording medium along a predetermined transportation path;

second detection means which outputs a second detection signal when a recording medium moves passed a second detection position which is ahead of said transportation means in the recording medium transportation direction;

third detection means which outputs a third detection signal when a recording medium moves passed a third detection position which is behind said transportation means in the recording medium transportation direction;

fourth detection means which outputs a fourth detection signal when a recording medium moves passed a fourth detection position which is behind said third detection position in the recording medium transportation direction; and

jam judging means which judges that a jam of said recording

medium has occurred, when at least one of a first condition and a second condition below is satisfied:

the first condition being a condition that during a period in which outputting of said second detection signal has been continuing since the start of the outputting of said second detection signal, outputting of said third detection signal has started, and during the same period, the outputting of said third detection signal ends,

the second condition being a condition that during a period in which outputting of said third detection signal has been continuing since the start of the outputting of said third detection signal, outputting of said fourth detection signal has started, and during the same period, the outputting of said fourth detection signal ends.

9. The image forming apparatus of claim 8, wherein the gap between said third detection position and said fourth detection position along said transportation path is shorter than the length of said recording medium in the recording medium transportation direction, and

in the absence of said fourth detection signal during continuous outputting of said third detection signal since the start of the outputting of said third detection signal, said jam judging means judges that a jam of said recording medium has occurred.

10. The image forming apparatus of claim 8, wherein in the absence of said third detection signal after a certain period of time, which

has been set in advance in accordance with the gap between said second and said third detection positions, since the start of outputting of said second detection signal, said jam judging means judges that a jam of said recording medium has occurred.

11. The image forming apparatus of any one of claim 8, wherein said transportation means is a fixing unit which fixes an unfixed image on said recording medium.

12. A jam detecting method for use in an image forming apparatus comprising transportation means which is for transporting a sheet-like recording medium along a predetermined transportation path, said method comprising the steps of:

detecting whether said recording medium is present each at second through fourth detection positions, said second detection position being behind said transportation means in the recording medium transportation direction, said third detection position being behind said transportation means in the recording medium transportation direction, and said fourth detection position being behind said third detection position in the recording medium transportation direction; and

judging that a jam of said recording medium has occurred when at least one of a first condition and a second condition below is satisfied:

the first condition being a condition that during continuous detection of the presence of said recording medium at said second

detection position, the detection result at said third detection position changes to one indicative the presence of said recording medium from one indicative the absence of said recording medium, and then changes to one indicative the absence of said recording medium again,

the second condition being a condition that during continuous detection of the presence of said recording medium at said third detection position, the detection result at said fourth detection position changes to one indicative the presence of said recording medium from one indicative the absence of said recording medium, and then changes to one indicative the absence of said recording medium again.

13. An image forming apparatus, comprising:

transportation means which transports a sheet-like recording medium along a predetermined transportation path;

fifth detection means which outputs a fifth detection signal when a recording medium moves passed a fifth detection position which is behind said transportation means in the recording medium transportation direction;

sixth detection means which outputs a sixth detection signal when a recording medium moves passed a sixth detection position which is behind said fifth detection position in the recording medium transportation direction; and

jam judging means which judges whether a jam of said recording medium has occurred, based on output signals from said fifth and said

sixth detection means.

14. The image forming apparatus of claim 13, wherein the gap between said fifth and said sixth detection positions is shorter than the length of said recording medium in the recording medium transportation direction, and

in the absence of said sixth detection signal during outputting of said fifth detection signal since the start of the outputting of said fifth detection signal, said jam judging means judges that a jam of said recording medium has occurred.

15. The image forming apparatus of claim 13, wherein the gap between said fifth and said sixth detection positions is shorter than the length of said recording medium in the recording medium transportation direction, and

when outputting of said sixth detection signal has started during a period in which outputting of said fifth detection signal has been continuing since the start of the outputting of said fifth detection signal and when the outputting of said sixth detection signal has ended during the same period, said jam judging means judges that a jam of said recording medium has occurred.

16. The image forming apparatus of claim 13, wherein in the absence of outputting of said sixth detection signal after a certain period of

time, which has been set in advance in accordance with the gap between said fifth and said sixth detection positions, since the start of outputting of said fifth detection signal, said jam judging means judges that a jam of said recording medium has occurred.

17. The image forming apparatus of claim 13, wherein said transportation means is a fixing unit which fixes an unfixed image borne by said recording medium on said recording medium.

18. A jam detecting method for use in an image forming apparatus comprising transportation means which is for transporting a sheet-like recording medium along a predetermined transportation path, said method comprising the steps of:

detecting whether said recording medium is present at a fifth detection position, which is behind said transportation means in the recording medium transportation direction, and whether said recording medium is present at a sixth detection position, which is behind said fifth detection position in the recording medium transportation direction ; and

judging whether a jam of said recording medium has occurred based on the results of the detection at said fifth and said sixth positions.